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to October 2, 1987
a. Interested persons
wan, Saskatoon, Sas-

of young pen-raised
panied by dehydration
to 45% in three flocks
oscopic lesions in the
um. *Cryptosporidium*
tions, bobwhite quail
suffered from acute,

perimentally infected
athogen in free-living
sporidium and other
Carolina, an area that
d from hunter killed,
ed for *Cryptosporid-*
re identified in 3.1%
opped quail (n = 104).
examined.
e quails, coupled with
that cryptosporidiosis

may play a role in the population dynamics of free living bobwhite quails. It is our hope that further investigations will enable us to characterize the determinants of quail abundance, which may include infectious and parasitic agents such as *Cryptosporidium* spp. *David H. Ley, Jay F. Levine, and Michael G. Levy, School of Veterinary Medicine; and Paul Curtis, College of Agriculture and Life Sciences; North Carolina State University, Raleigh, North Carolina 27606, USA.*

National Wildlife Health Center Quarterly Mortality Report. The following summarizes bird mortalities reported by NWHC for October–December 1986.

A nearby dump of moldy waste grains appeared to be the source of *Aspergillus fumigatus* and *Rhizopus* sp. that caused acute mycotic pneumonia in 130 mallards, during October, in Washington. There is some evidence that preformed toxins (aflatoxins) may also have been present in the grain. There were no mortalities reported after this grain pile was removed.

Hundreds of Canada geese died from an as-yet undetermined cause in western Minnesota during October and November. Geese were emaciated and had esophageal impactions that contained green vegetation and small amounts of corn. Clinical signs and gross lesions resembled those of the few Canada geese dying on the same area from lead poisoning except there was no ingested lead shot. Analyses of tissues for heavy metals were within normal limits. Additional laboratory tests are pending.

Nebraska's Rainwater Basin experienced its second fall avian cholera outbreak in late November. Snow geese comprised 57% of the 1,304 waterfowl picked up in a reservoir southwest of Clay Center. This reservoir was the site of the other fall outbreak in 1984 in which 550 waterfowl were picked up (48% white fronts, 31% mallards).

During November an undetermined number of mallards, green-winged teal, and cormorants died at Spirit Lake Reservoir, 25 miles east of Texarkana, Texas. Arkansas Game and Fish personnel indicated that a large number of fish had also been found dead at the 150-acre reservoir. Necropsy of water-fowl carcasses submitted to NWHC yielded no indications of infectious disease. Reversible brain cholinesterase depression was found in four carcasses and a diagnosis of suspect carbamate toxicosis was issued. USFWS's Environmental Contaminants program is following up on this case. *Kathryn Converse, National Wildlife Health Center.*

Please send all items for the *Wildlife Disease Newsletter* to: W. R. Davidson, School of Forest Resources, The University of Georgia, Athens, Georgia 30602, USA. The *Wildlife Disease Newsletter* is non-refereed and items contained in the *Newsletter* may not be acceptable as and should not be cited as published material.

QUARTERLY DIE-OFF REPORT

October 1986-December 1986

National Wildlife Health Center

Location	Date	Principal species	Mortality	Principal cause of mortality
Indianapolis, IN	09/23/86-10/07/86	?Domestic mallards	20	Undetermined
Columbus, OH	10/01/86-10/01/86	Domestic mallards	15	Avian botulism
Harrington, WA	10/19/86-10/28/86	Mallards, pintails, red-heads	130	Aspergillosis
Dimmit, TX	-10/16/86	Pintails, blue-winged teal	3	Avian botulism
Wilmington, DE	-10/20/86	Herring gulls	5	Aspergillosis
Sacramento, CA	10/23/86-11/30/86	Mallards, wigeons, pintails, Red-tailed hawks	185	Furadan poisoning
Lac Qui Parle WMA, MN	10/11/86-11/25/86	Canada geese	1,500	Undetermined
Lower Klamath NWR, CA	11/04/86-11/04/86	Mallards, pintails	40	Toxin: OP suspect
Tule Lake NWR, CA	11/07/86-ongoing	Snow geese, mallards, wigeons, white-fronted geese	3,550 (e)	Avian cholera
Lower Klamath NWR, CA	11/07/86-12/29/86	Snow geese, mallards, wigeons	4,000 (e)	Avian cholera
New Deal, TX	11/09/86-11/17/86	Pintails, shovellers	60 (e)	Avian botulism suspect ¹
Southern area, MA	10/00/86-10/00/86	Canada geese	59	Lead poisoning suspect ¹
Derry, NH	11/10/86-11/10/86	Canada geese	10	Toxin: suspect
Bosque del Apache NWR, NM	11/17/86-11/18/86	Snow geese	2	Avian cholera
Cross Creeks NWR, TN	11/17/86-11/17/86	Canada geese	1	Parasitic enteritis
Sacramento NWR, CA	11/17/86-ongoing	White-fronted geese, pintails, snow geese, cackling geese	700	Avian cholera
Calverton, NY	11/20/85-12/03/85	Canada geese	12	Lead poisoning suspect ¹
Spirit Lake Reservoir, AR	11/20/86-11/21/86	Mallards, green-winged teal, cormorants	300	Toxin: carbamate suspect
Rainwater Basin, NE	11/20/86-01/06/87	Snow geese, white-fronted geese, Canada geese, mallards	1,406	Avian cholera
Lombard, IL	11/15/86-11/30/86	Giant Canada geese	36	Lead poisoning
Marian Reservoir, KS	11/23/86-11/23/86	Cormorants	37	Renal coccidiosis, gastric parasitism
Frederick, MD	10/13/86-10/20/86	Gray foxes	8-9 (e)	Toxin suspect
Squaw Creek NWR, MO	11/28/86-12/10/86	Snow geese, mallards	1,300	Avian cholera
Colusa NWR, CA	12/02/86-01/09/87	Snow geese, Ross' geese	300	Lead poisoning
Butte Sink NWR, CA	11/17/86-01/08/87	Pintails, wigeons, ruddies, coots	106	Avian cholera
Riverton, Forney, Hamburg, IA	12/02/86-12/30/86	Snow geese, mallards	1,065	Avian cholera, lead poisoning
Red Rock Lakes, MT	-12/05/86	Trumpeter swans	2,300	Avian cholera
Gaines County, TX	12/15/86-01/03/87	Sandhill cranes	1	Lead poisoning
Desoto NWR, IA	12/15/86-01/03/87	Sandhill cranes	75 (e)	Toxin: mycotoxin suspect
Reno, NV	-12/30/86	Snow geese	99 (e)	Toxin: mycotoxin suspect
Grulla NWR, NM	12/17/86-12/17/86	Wigeons	25	Avian cholera
Delevan NWR, CA	11/28/86-01/12/87	Sandhill cranes	235	Toxin: OP suspect
Chicago, IL	12/08/86-ongoing	Snow geese, Ross' geese, shovellers	326	Toxin: mycotoxin suspect
Update*	12/28/86-12/30/86	Mallards	3	Avian cholera
Colusa NWR, CA	12/28/86-12/30/86	Mallards	3	Toxin: petroleum suspect
St. Paul, MN	08/15/86-09/05/86	Mallards, Snowy egrets	6	Avian botulism ¹
	09/04/86-10/31/86	Mallards, Canada geese	95	Avian botulism

QUARTERLY DIE-OFF REPORT

October 1986–December 1986

(Continued)

Principal cause
of mortality

Undetermined
Avian botulism
Aspergillosis

Avian botulism
Aspergillosis
Curadan poisoning

Undetermined

Toxin: OP suspect

Avian cholera

Avian cholera

Avian botulism suspect¹
Lead poisoning suspect¹
Toxin: suspect
Avian cholera

Parasitic enteritis

Avian cholera

Lead poisoning suspect¹
Toxin: carbamate sus-
pect
Avian cholera

Lead poisoning
Renal coccidiosis, gastric
parasitism
Toxin suspect
Avian cholera
Lead poisoning
Avian cholera
Avian cholera, lead poi-
soning
Avian cholera

Lead poisoning

Toxin: mycotoxin sus-
pect
Avian cholera
Toxin: OP suspect
Toxin: mycotoxin sus-
pect
Avian cholera

Toxin: petroleum suspect

Avian botulism¹

Avian botulism

Location	Date	Principal species	Mortality	Principal cause of mortality
Delevan NWR, CA	08/20/86–10/30/86	Mallards, wigeons, coots, green-winged teal, pin- tails	1,184	Avian botulism
Sacramento NWR, CA	08/01/86–10/30/86	Pintail, mallards, green- winged teal, coots	969	Avian botulism

¹ No carcasses submitted.

* Final mortality information, from cases ongoing last quarter.

e = estimated mortality.

For specific information, contact the following Resource Health Team members: Pacific Flyway—Kathryn Converse,
Central Flyway—Ronald Windingstad, Mississippi Flyway—Chris Franson, Atlantic Flyway—Tom Roffe.

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